

Claims

1. A multichannel information processing device wherein a plurality of video images are displayed simultaneously on a display device, comprising:

video image information control means for acquiring information for said plurality of video images, and for deciding video image position information relating to display position on a display device for said plurality of video images and outputting said information for a plurality of video images based on said video image position information;

cursor position control means for calculating cursor position information based on cursor instructions information input via an input device and generating and outputting cursor image information based on said cursor position information;

display image generating means for synthesizing information for the plurality of video images output by said video image display control means and cursor image information output by cursor position control means and displaying the same on said display device;

distance information generating means for calculating distance between display positions of said plurality of video images and cursor display position based on video image position information for said plurality of video images and cursor position information calculated by said cursor position information control means, and generating distance information; and

audio output control means for deciding volume of audio data for said plurality of video images based on distance information generated by said distance information generating means, and outputting audio data to an output device.

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2. A multichannel information processing device according to claim 1, wherein said audio output control means sets volume for audio data for the video image having the smallest distance value among the distance information generated by said distance information generating means at a predetermined sound volume V_a , and sets volume for audio corresponding to the other video images at predetermined sound volume V_b , which is lower than said volume V_a .

15 3. A multichannel information processing device according to claim 1, wherein said audio output control means sets volume for audio data for said plurality of video images so as to be in inverse proportion to distance values generated by said distance information generating means.

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4. A multichannel information processing device according to claim 1, wherein distance information generated by said distance information generating means includes direction information relating to direction of video image display position as seen from cursor display position, and said audio output control means makes output to an audio output device based on said distance information, so that audio data for said plurality of video images is positioned

in the sound space formed by said audio output device.

5. A multichannel information processing device according to claim 1, further comprising:

5 voice data recognition means for recognizing words included in audio data for said plurality of video images, and

character information display means for converting words recognized by said voice data recognition means into
10 character data and displaying the same on said display device.

6. A multichannel information processing device according to claim 5, comprising:

Internet connection means,

15 web site search means for searching for related web sites on the Internet, using a word recognized by said voice data recognition means as keyword; and

web site display means for displaying on said display device a web site found by said web site search means.

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7. A multichannel information processing device according to claim 1, further including video image selecting means for selecting, based on a prescribed algorithm, a specified video image from among a plurality of video images
25 displayed on said display device, wherein said audio output control means outputs to an audio output device audio data for the video image selected by said video image selecting means.

8. A multichannel information processing device according to claim 7, wherein said video image selecting means switches to a different video image for selection
5 whenever a prescribed length of time has passed.

9. A multichannel information processing method for displaying a plurality of video images simultaneously on a display device, including:

10 a step for deciding display position on said display device for video images to be displayed on a display device;

a step for outputting information for said plurality of video images based on decided display position;

15 a step for accepting cursor instructions information input from said input device;

a step for calculating cursor position information for displaying cursor based on said cursor instructions information;

20 a step for generating cursor image information based on said cursor position information;

a step for synthesizing information for said plurality of video images and said cursor image information, generating a display image, and displaying the same on said display device;

25 a step for calculating distance between display position of said plurality of video images and said cursor display position and generating distance information; and

a step for deciding volume for audio for the plurality

of video images based on said distance information and outputting to an audio output device accordingly.

10. A multichannel information processing method
5 according to claim 9, wherein volume for audio data for the video image having the smallest distance value among the distance information for a plurality of video images is set at a predetermined sound volume Va, and volume for audio data for the other video images is set at predetermined sound
10 volume Vb, which is lower than volume Va.

11. A multichannel information processing method
according to claim 9, wherein volume for audio data for said plurality of video images is set so as to be in inverse
15 proportion to distance values within distance information.

12. A multichannel information processing method
according to claim 9, further comprising:

a step for generating direction information relating to
20 direction of display position of video images as seen from cursor display position, and

a step for making output to said audio output device, so that audio data for said plurality of video images is positioned in the sound space of the audio output device in
25 accordance with said distance information and said direction information.

13. A multichannel information processing method

according to claim 9, further comprising:

a step for voice-recognizing words included in audio for said plurality of video images, and

a step for converting voice-recognized words into
5 character data and displaying the same on said display device.

14. A multichannel information processing method according to claim 13, comprising:

10 a step for connecting to the Internet;

a step for searching for related web sites on the Internet, using a voice-recognized word as keyword; and

a step for displaying on said display device a found related web site.

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15. A multichannel information processing method according to claim 9, further comprising:

a step for selecting with a prescribed algorithm a specified video image from among said plurality of video
20 images displayed on said display device, and

a step for outputting to said audio output device audio data for a selected video image.

16. A program for executing on a computer a
25 multichannel information processing method for displaying a plurality of video images simultaneously on a display device, such method comprising:

a step for deciding display position on display device

for said video images to be displayed;

a step for outputting information for said plurality of video images based on decided display position;

a step for accepting cursor instructions information
5 input from said input device;

a step for calculating cursor position information for displaying cursor based on said cursor instructions information;

a step for generating cursor image information based on
10 said cursor position information;

a step for synthesizing information for said plurality of video images and said cursor image information, generating a display image, and displaying the same on said display device;

15 a step for calculating distance between display position of said plurality of video images and display position of said cursor and generating distance information; and

a step for deciding volume for audio for said plurality
20 of video images based on said distance information and outputting to an audio output device accordingly.

17. A program for executing on a computer a multichannel information processing method for displaying a
25 plurality of video images simultaneously on a display device, such method comprising:

a step for deciding display position on display device for said video images to be displayed;

a step for outputting information for said plurality of video images based on decided display position;

a step for accepting cursor instructions information input from said input device;

5 a step for calculating cursor position information for displaying cursor based on said cursor instructions information;

a step for generating cursor image information based on said cursor position information;

10 a step for synthesizing information for said plurality of video images and said cursor image information, generating a display image, and displaying the same on said display device;

a step for calculating distance between display
15 position of said plurality of video images and display position of said cursor and generating distance information; and

a step for setting volume for audio data for the video image having the smallest distance value among the distance
20 information generated with regard to said plurality of video images at a predetermined sound volume V_a , and setting volume for audio for the other video images at predetermined sound volume V_b , which is lower than volume V_a , and outputting to an audio output device accordingly.

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18. A program for executing on a computer a multichannel information processing method for displaying a plurality of video images simultaneously on a display device,

such method comprising:

a step for deciding display position on display device
for said video images to be displayed;

a step for outputting information for said plurality of
5 video images based on decided display position;

a step for accepting cursor instructions information
input from said input device;

a step for calculating cursor position information for
displaying cursor based on said cursor instructions
10 information;

a step for generating cursor image information based on
said cursor position information ;

a step for synthesizing information for said plurality
of video images and said cursor image information, generating
15 a display image, and displaying the same on said display
device;

a step for calculating distance between display
position of said plurality of video images and display
position of said cursor and generating distance information;
20 and

a step for setting volume for audio data for said
plurality of video images so as to be in inverse proportion
to distance value in distance information, and outputting to
an audio output device accordingly.

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19. A program for executing on a computer a
multichannel information processing method for displaying a
plurality of video images simultaneously on a display device,

such method comprising:

a step for deciding display position on display device for said video images to be displayed;

5 a step for outputting information for said plurality of video images based on decided display position;

a step for accepting cursor instructions information input from said input device;

a step for calculating cursor position information for displaying cursor based on said cursor instructions
10 information;

a step for generating cursor image information based on said cursor position information;

a step for synthesizing information for said plurality of video images and said cursor image information, generating
15 a display image, and displaying the same on said display device;

a step for calculating distance between display position of said plurality of video images and display position of said cursor and generating distance information;

20 a step for generating direction information relating to direction of display position for each video image as seen from cursor display position; and

a step for making output to said audio output device so that audio data corresponding to said plurality of video
25 images is positioned at acoustic image positions in the sound space of said audio output device in accordance with said distance information and said direction information.

20. A program for executing on a computer a multichannel information processing method for displaying a plurality of video images simultaneously on a display device, such method comprising:

- 5 a step for deciding display position on display device for said video images to be displayed;
- a step for outputting information for said plurality of video images based on decided display position;
- a step for accepting cursor instructions information
- 10 input from said input device;
- a step for calculating cursor position information for displaying cursor based on said cursor instructions information;
- a step for generating cursor image information based on
- 15 said cursor position information;
- a step for voice-recognizing words included in audio data for said plurality of video images;
- a step for converting voice-recognized words into character data and outputting the same; and
- 20 a step for synthesizing said plurality of video images, said cursor image information and said character information, generating a display image and displaying the same on said display device.

25 21. A program for executing on a computer a multichannel information processing method for displaying a plurality of video images simultaneously on a display device, such method comprising:

a step for deciding display position on display device for said video images to be displayed;

a step for outputting information for said plurality of video images based on decided display position;

5 a step for accepting cursor instructions information input from said input device;

a step for calculating cursor position information for displaying cursor based on said cursor instructions information;

10 a step for generating cursor image information based on said cursor position information;

a step for calculating distance between position information for said plurality of video images and said cursor position information and generating distance

15 information;

a step for selecting a specified video image from among the plurality of video images based on said distance information and outputting audio data for this video image to an audio output device;

20 a step for voice-recognizing words included in audio data for output to said audio output device;

a step for converting voice-recognized words into character information and outputting the same; and

a step for synthesizing said plurality of video images,

25 said cursor image information and said character information, generating a display image and outputting the same to a display device.

22. A program for executing on a computer a multichannel information processing method for displaying a plurality of video images simultaneously on a display device, such method comprising:

5 a step for deciding display position on display device for said video images to be displayed;

 a step for outputting information for said plurality of video images based on decided display position;

 a step for accepting cursor instructions information
10 input from said input device;

 a step for calculating cursor position information for displaying cursor based on said cursor instructions information;

 a step for generating cursor image information based on
15 said cursor position information;

 a step for calculating distance between position information for said plurality of video images and said cursor position information and generating distance information;

20 a step for selecting a specified video image from among the plurality of video images based on said distance information and outputting audio data for this video image to an audio output device;

 a step for voice-recognizing words included in audio
25 data for the plurality of video images;

 a step for connecting to the Internet;

 a step for searching for related web sites on the Internet using a voice-recognized word as keyword; and

a step for synthesizing said plurality of video images, said cursor image information and said found web site, generating a display image and displaying the same on said display device.

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23. A program for executing on a computer a multichannel information processing method for displaying a plurality of video images simultaneously on a display device, such method comprising:

10 a step for deciding display position on display device for said video images to be displayed;

a step for outputting information for said plurality of video images based on decided display position;

15 a step for selecting with a prescribed algorithm a specified video image from among said plurality of video images displayed on said display device; and

a step for outputting audio data for the selected video image to said audio output device.

20 24. A computer-readable medium on which is recorded the program of claim 16.

25 25. A computer-readable medium on which is recorded the program of claim 17.

26. A computer-readable medium on which is recorded the program of claim 18.

27. A computer-readable medium on which is recorded the
program of claim 19.

28. A computer-readable medium on which is recorded the
5 program of claim 20.

29. A computer-readable medium on which is recorded the
program of claim 21.

10 30. A computer-readable medium on which is recorded the
program of claim 22.

31. A computer-readable medium on which is recorded the
program of claim 23.

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